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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,088

01/16/2004

Kuo Yu-Chuan

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EXAMINER

TSAI, TSUNG YIN

ART UNIT

PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/758,088

Applicant(s)

YU-CHUAN ET AL.

Examiner

Tsung-Yin Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/16/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/20/2006 and 9/22/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

(1) Page 1 lines 10-23 to page 2 lines 1-4

Claim Objections

2. Claims 1-6 are objected to because of the following informalities:

(1) Regarding claim 1 recited the term "M". It is not explain what the term "M" stands for and came about.

(2) Regarding claim 1 recited the term "N". It is not explain what the term "N" stands for and came about.

Appropriate correction is required.

Claim Rejection – 35 USC 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being unpatentable over Miyake et al (EP 1 001 374 A2. IDS).

Miyake et al teaching the following method comprising:

(a) storing the M first images (101 Figure 4, 100 Figure 12, 100 figure 13, 101 figure 14, 100 Figure 25, 101 Figure 37. The "storage unit" is what stores the first images from the user);

(b) selecting one from the M first images as a prototype image, and referring the non-selected (M-1) first images to being as (M-1) second images (page 6 para [0080], "one image is a certain image (hereinafter referred to as the m-th frame)" is interpret as the M first image for the prototype image);

(c) based on the magnification factor (page 3 para 0016 show processing of "enlarge image in this matter" is seen as magnification factor), interpolating extra pixels into the set of pixels of the prototype image (page 3 para 0016, figure 35 showing interpolation carry out by the apparatus), and then inferring the values of the extra pixels according to the values of neighbor pixels (page 9 para 0098 show that factors regarding pixel values of the present and other frames of the image are factor in for this interpolation) thereof to produce an interpolated prototype image (page 6 para [0080], "one image is a certain image (hereinafter referred to as the m-th frame)..." is interpret as the M first image for the prototype image), and calculating a respective translation (page 6 para 0070-0071 where motion vector is seen as the translation) between each of the (M-1) second

images and the interpolated prototype image (page 8 para 0098, 107 Figure 4, 107 Figure 12, 107 Figure 13, 107 Figure 14, 107 Figure 25, page 3 para [0016]-[0017], page 7 para [0086], figure 35, page 5 para [53], page 7 para [0096]-[0097]. Interpolation Unit shows that the interpolation method is apply.);

(d) dividing the translations (page 6 para 0070-0071 where motion vector is seen as the translation) of the (M-1) second images by the magnification factor (page 3 para 0016 show processing of "enlarge image in this matter" is seen as magnification factor), respectively, to obtain the modulus (page 6 para 0071, 0074-0078 disclose a so-called template matching. This is template is seen the modulus that will be assisting the motion vectors for, page 10 para 0130 also disclose a "transform coefficient unit" that can also seen as a modulus) with respect to the translations of the (M-1) second images (page 6 para [0080], "one image is a certain image (hereinafter referred to as the m-th frame), selecting, based on a criteria (page 6 para 0075 disclose a residual testing method which is seen as a method of testing to met a criteria, page 7 para 0084 states "slight restriction applies" is seen as a criteria as well), one from the second images whose related modulus are the same (page 6 para 0079-0080 discloses the calculation of motion vectors of two types of continuous images. The related modulus is the motion vector and the second images are the two types of continuous images, page 7 para 0090 shows that motion vector is common in all block showing in Fig 7A-7C), and referring the selected second images together with the rest of the second images whose related modulus are not the same to

being as N third images, wherein N is equal to or less than (M-1) (page 12 para 0157 shows blocks that are transverse, which is seen as different, are label how block A are created);

(e) down-sampling the interpolated prototype image N times according to the respective translation between each of the N third images (page 13 para 0169 shows that transform being carry out between the third images and the interpolated prototype image) and the interpolated prototype image to produce N fourth images which each corresponds to one of the N third images (page 13 para 0167 new blocks are form, which are seen as the fourth images, develop from B to B');;

(f) calculating the difference between each of the N third images and the corresponding fourth image thereof (page 9 para [0114]-[0121]. The third embodiment of this patent describes the calculation of the difference in the translation of frames);

(g) adjusting the values of the pixels of the interpolated prototype image according to an average of the differences calculated in step (f) (page 9 para [0120]. The phrase "an appropriate interpolation processing, the image quality after the interpolation is further enhanced" show that adjustment were made to the interpolation prototype image.); and

(h) repeating step (e) through step (g), until the values of the pixels of the interpolated prototype image converge to a satisfactory result, and referring the interpolated prototype image whose values of pixels converge to the satisfactory

result to being as the enhanced-resolution image (page 8 para [0110]. The phrase "...this processing is repeated to a predetermined upper limit...a high quality and resolution image can be obtained" show that the process is repeated until satisfactory result is approve.).

Allowable Subject Matter

7. Claims 2-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent forms including all of the limitation of the base claims and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patte et al (US Patent Number 5,696,848) disclose system for creating a high resolution image from a sequence of lower resolution motion images.

Ogura (US Patent Number 5,872,604) disclose method and apparatus for detection of motion vectors.

Carison et al (US Patent Number 6,650,704 B1) disclose method of producing a high quality, high resolution image from a sequence of low quality, low resolution images that are undersampled and subject to jitter.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tsung-Yin Tsai whose telephone number is (571) 270-1671. The examiner can normally be reached on Monday - Friday 8 am - 5 pm ESP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tsung-Yin Tsai
April 19, 2007



SHUWANG LIU
SUPERVISORY PATENT EXAMINER